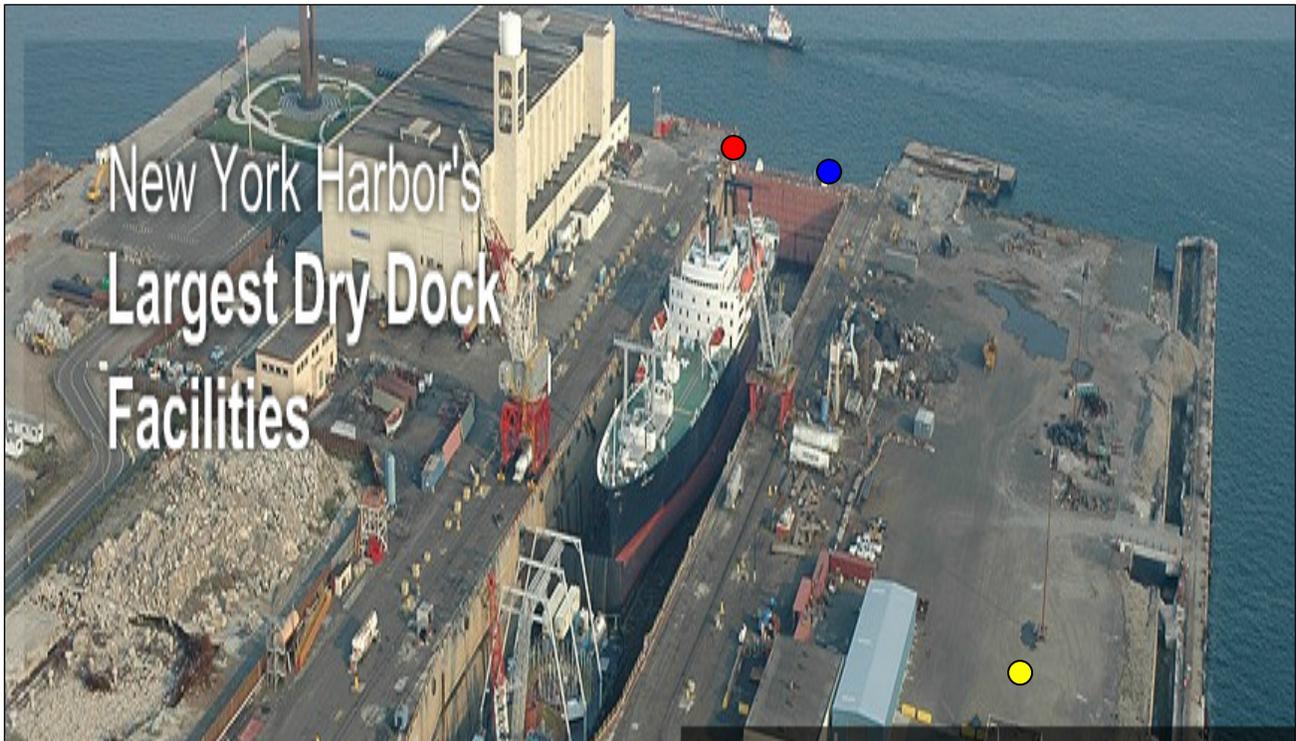


Bayonne Dry Dock & Repair Corp.
Monitoring Data Report and Assessment
NJ01645808

INTRODUCTION SUMMARY

The following report summarizes the stormwater and sediment data collected from Bayonne Dry Dock & Repair Corp. (Bayonne). Bayonne received NJPDES Permit No. NJ0165808 (the permit) for their Stormwater Discharges to Surface Water, effective 3/1/2008. Sufficient data has been collected to make an assessment on the quality of stormwater and sediment discharging from this facility. Stormwater and sediment from Bayonne discharges to the Upper New York Bay, classified as SE2(C2). Upper New York Bay is within the Upper NY Bay/Kill Van Kull (74d07m30s) Sub-Watershed.

During the permit development, three (3) representative stormwater monitoring locations (002A, 003A and 004A) and two (2) representative sediment monitoring locations (005A and 006A) were selected. The final effective NJPDES permit requires Bayonne to conduct a minimum of monthly/quarterly stormwater monitoring and yearly sediment monitoring. The Aerial Photograph 1 below depicts Bayonne and the selected representative monitoring locations.



- Stormwater monitoring location 004A and Sediment monitoring location 006A
- Stormwater monitoring location 003A and Sediment monitoring location 005A
- Stormwater monitoring location 002A

303(d) LIST

As an initial step in the assessment, the Department researched the NJDEP 303(d) List of Water Quality Limited Waters (303(d) List). The 303(d) List identifies all waters that do not support an applicable designated use because of a chemical pollutant. The 303(d) List also contains the priority ranking of each assessment unit/pollutant combination ("high", "medium", or "low") for TMDL development. Table 1 below depicts the 303(d) List for the Upper NY Bay/Kill Van Kull (74d07m30s) Sub-Watershed. The 303(d) List is used in this report to compare Bayonne's monitoring results with the known chemical pollutants causing water impairments.

TABLE 1 - New Jersey's Draft 2010 Draft 303(d) List of Water Quality Limited Waters				
Assessment Unit	Assessment Unit Name	Parameter	Ranking	TMDL Schedule
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Benzo(a)pyrene(PAHs)	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Cause Unknown	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Chlordane	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	DDD	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	DDE	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	DDT	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Dieldrin	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Dioxin (including 2,3,7,8-	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Heptachlor epoxide	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Hexachlorobenzene	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	Mercury in Water Column	Medium	Beyond 2012
NJ02030104010030-01	Upper NY Bay/Kill Van Kull (74d07m30s)	PCB in Fish Tissue	Medium	Beyond 2012

SEDIMENT MONITORING DATA AND RESULTS

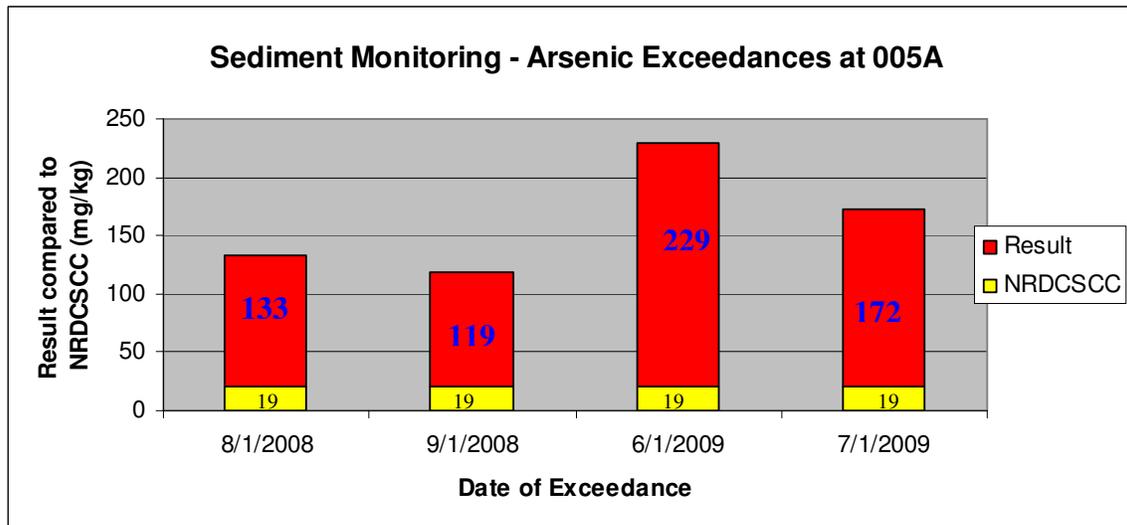
Table 2 below summarizes the sediment monitoring requirements of the permit.

TABLE 2		
Sediment Monitoring Requirements		
Parameter	Units	Frequency
Arsenic	mg/kg	1/Year
Silver	mg/kg	1/Year
Copper	mg/kg	1/Year
Cadmium	mg/kg	1/Year
Zinc	mg/kg	1/Year
Lead	mg/kg	1/Year
Nickel	mg/kg	1/Year
Mercury	mg/kg	1/Year
Chromium	mg/kg	1/Year
PCBs	mg/kg	1/Year

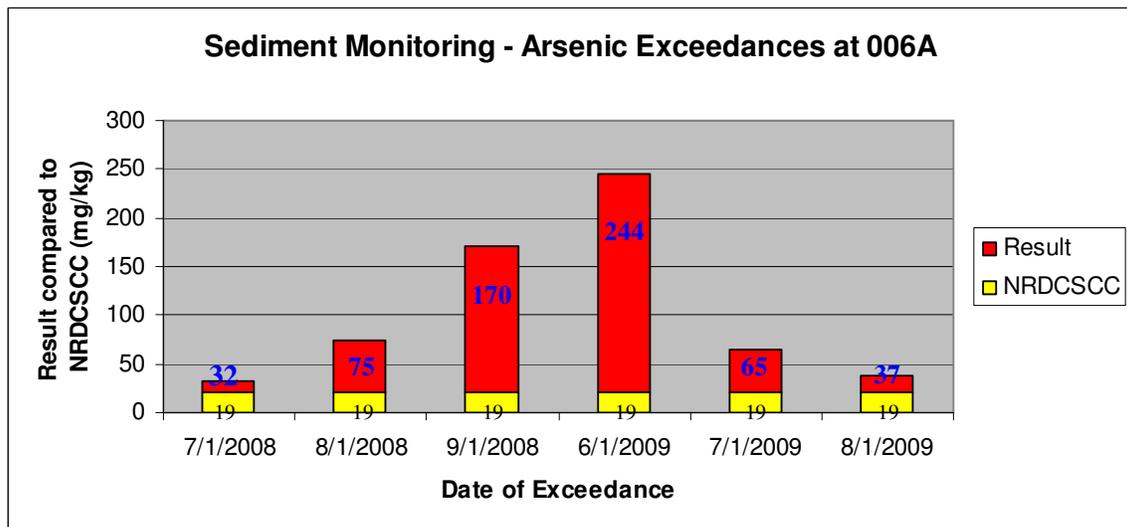
The sediment monitoring data used in this report occurred between June 1, 2008 and September 1, 2010. Yearly sediment samples were required to be collected at least once during the months of June through September. Four (4) sediment samples were collected in 2008, four (4) sediment samples were collected in 2009 and one (1) sediment sample was collected in 2010. To date, a total of nine (9) sediment monitoring events have occurred. These nine (9) events represent the data being used to assess sediment quality at Bayonne.

Data collected during the nine (9) monitoring events was compared to Non-Residential Direct Contact Soil Cleanup Criteria (NRDCSCC) found in the Cleanup Standards for Contaminated Sites, N.J.A.C. 7:26D, last amended November 4, 2009. The charts below represent exceedances of the NRDCSCC.

ARSENIC

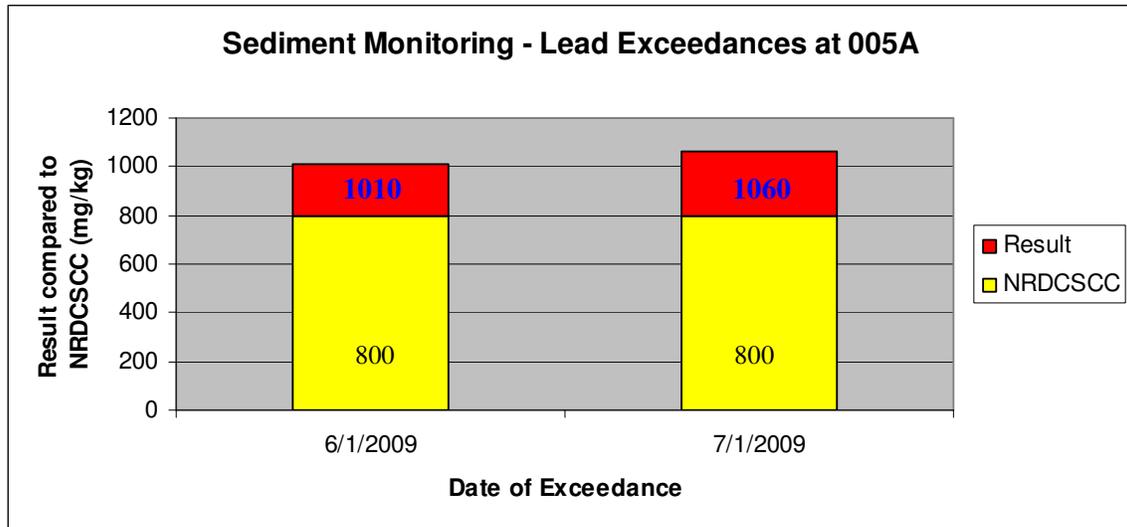


- 4/9 sediment samples exceeded the NRDCSCC for Arsenic at 005A.
- The 4 sediment samples depicted above were between **6.26** and **12.05** times the NRDCSCC for Arsenic.

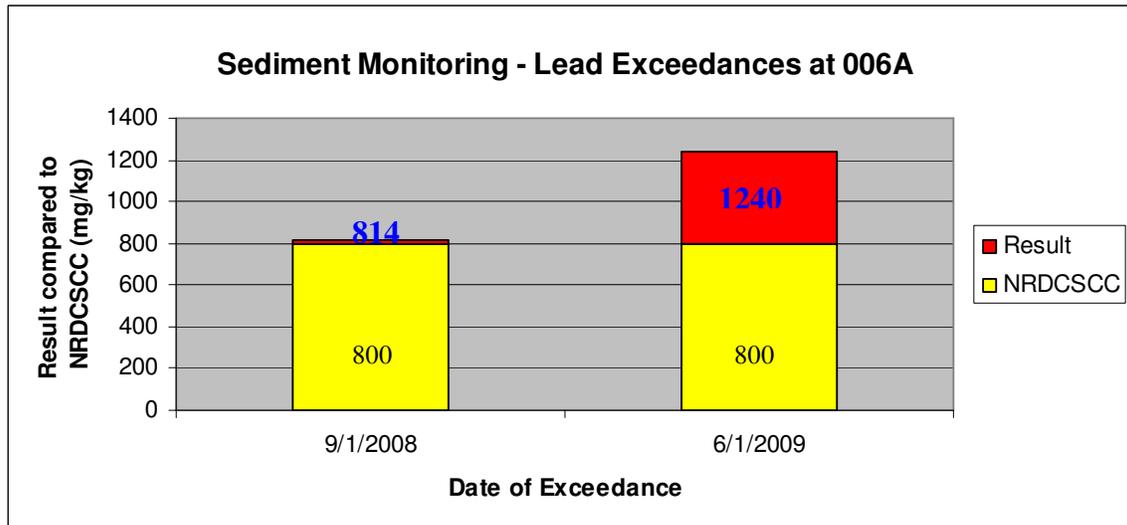


- 6/9 sediment samples exceeded the NRDCSCC for Arsenic at 006A.
- The 6 sediment samples depicted above were between **1.68** and **12.84** times the NRDCSCC for Arsenic.

LEAD

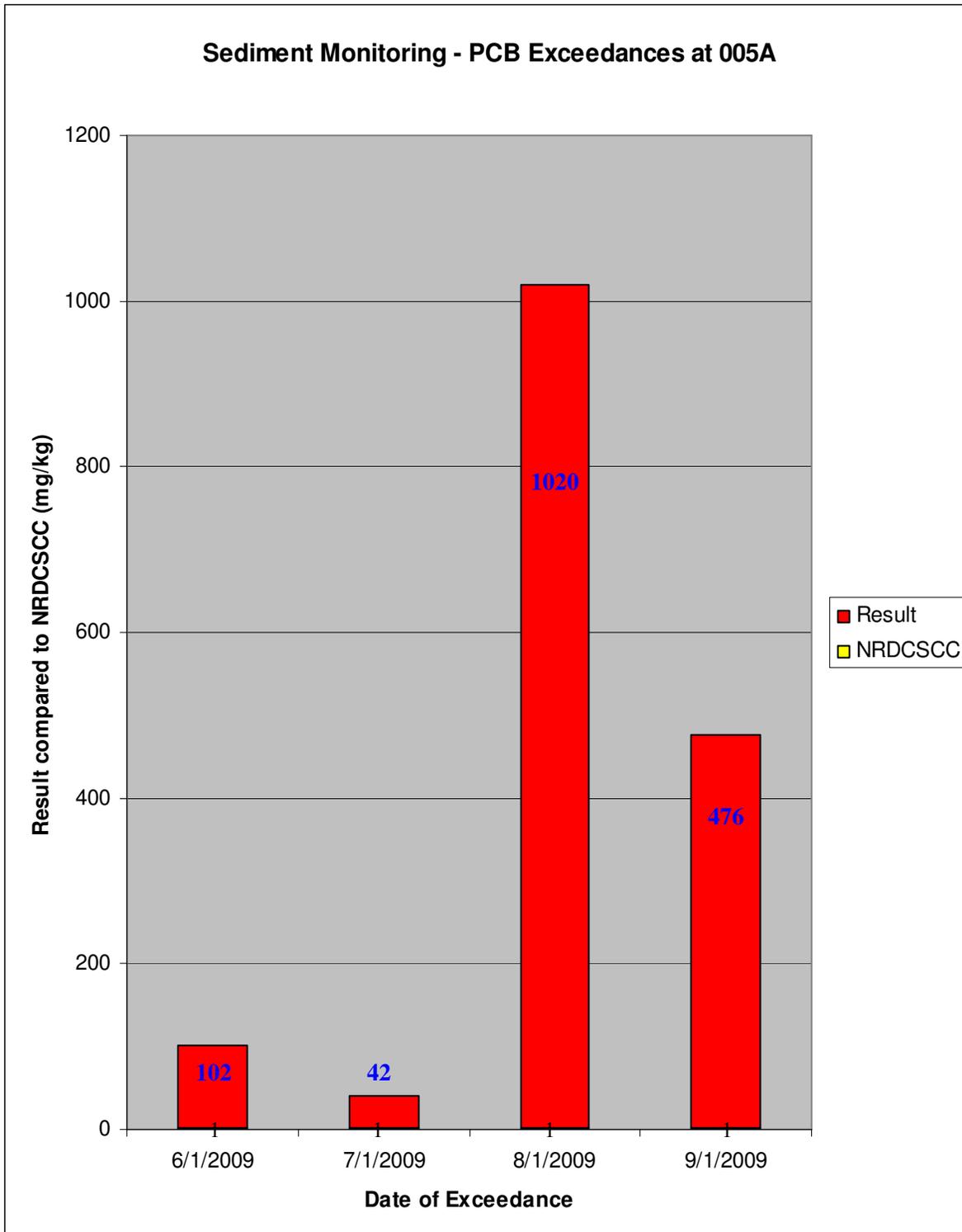


- 2/9 sediment samples exceeded the NRDCSCC for Lead at 005A.
- The 2 sediment samples depicted above were between **1.26** and **1.33** times the NRDCSCC for Lead.

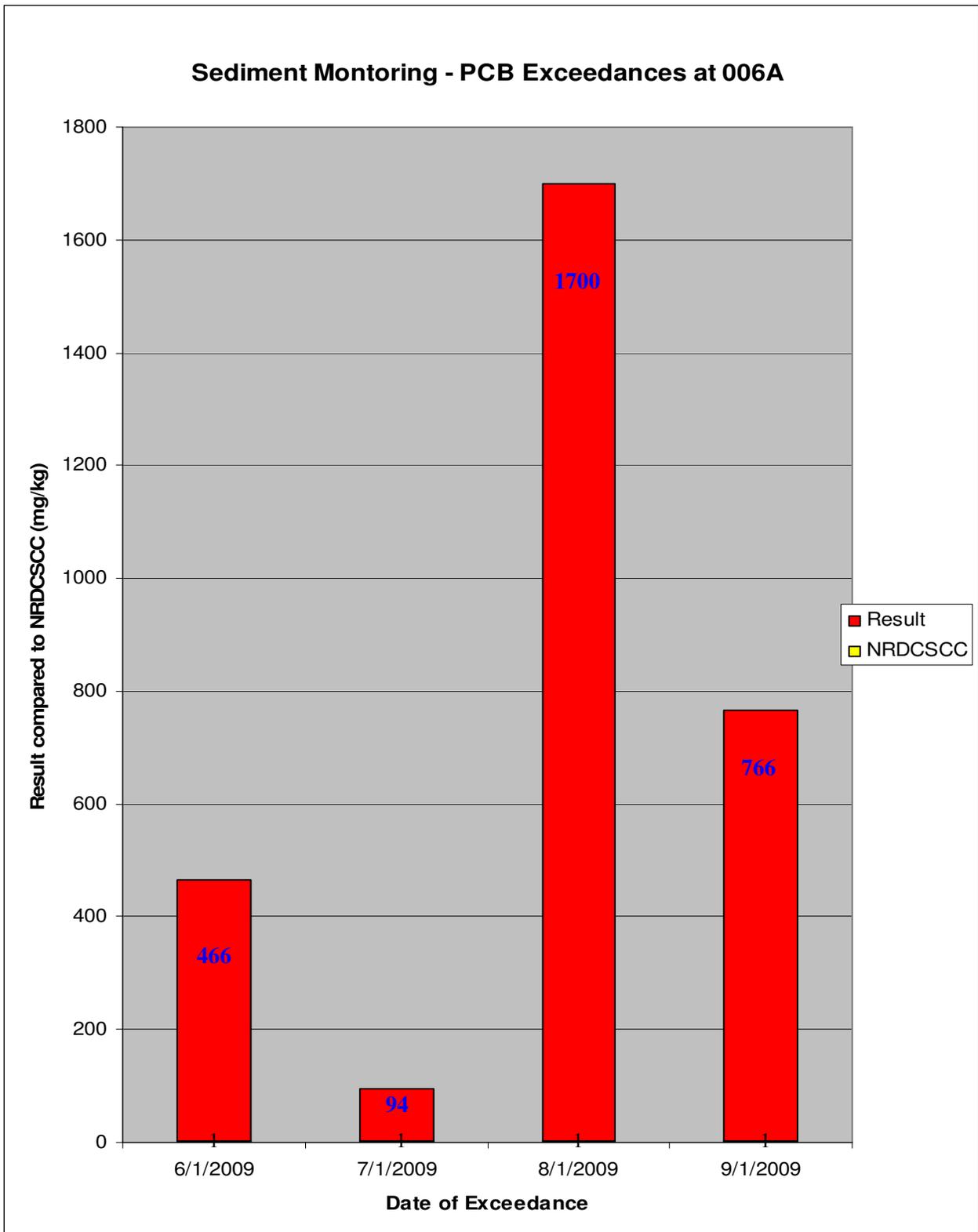


- 2/9 sediment samples exceeded the NRDCSCC for Lead at 006A.
- The 2 sediment samples depicted above were between **1.02** and **1.55** times the NRDCSCC for Lead.

PCBs



- 4/9 sediment samples exceeded the NRDCSCC for PCBs at 005A.
- The 4 sediment samples depicted above were between **42** and **1,020** times the NRDCSCC for PCBs.



- 4/9 sediment samples exceeded the NRDCSCC for PCBs at 006A.
- The 4 sediment samples depicted above were between **94** and **1,700** times the NRDCSCC for PCBs.

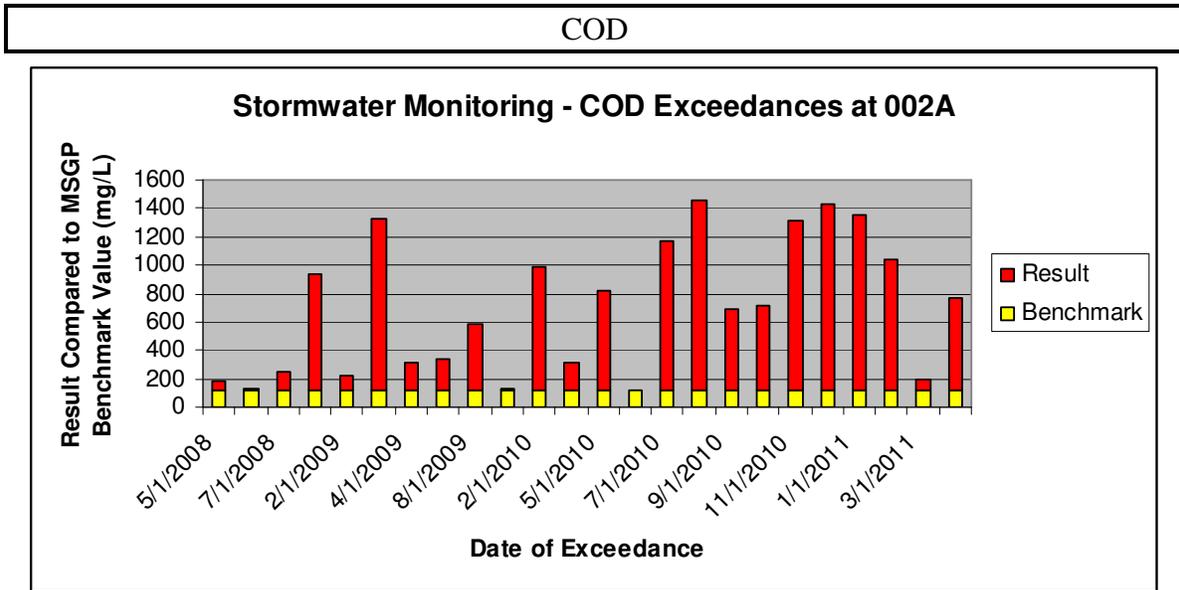
STORMWATER MONITORING DATA AND RESULTS

Table 3 below summarizes the stormwater monitoring requirements of the permit.

Table 3 - Stormwater Monitoring Requirements					
Parameter	Units	Frequency	Parameter	Units	Frequency
pH precipitation	su	1/Month	N-nitrosodi-n-propylamine	mg/l	1/Quarter
pH	su	1/Month	N-nitrosodiphenyl-amine	mg/l	1/Quarter
TSS	mg/l	1/Month	Nitrobenzene	mg/l	1/Quarter
TPHC	mg/l	1/Month	Phenanthrene	mg/l	1/Quarter
COD	mg/l	1/Month	Pyrene	mg/l	1/Quarter
TOC	mg/l	1/Month	Benzo(ghi)perylene	mg/l	1/Quarter
Magnesium	mg/l	1/Month	1,2-Dichlorobenzene	mg/l	1/Quarter
Arsenic	mg/l	1/Month	1,2,4-Trichlorobenzene	mg/l	1/Quarter
Beryllium	mg/l	1/Month	Dibenzo(a,h)anthracene	mg/l	1/Quarter
Cadmium	mg/l	1/Month	1,3-Dichlorobenzene	mg/l	1/Quarter
Copper	mg/l	1/Month	1,4-Dichlorobenzene	mg/l	1/Quarter
Iron	mg/l	1/Month	2-Chloronaphthalene	mg/l	1/Quarter
Lead	mg/l	1/Month	Di-n-octyl Phthalate	mg/l	1/Quarter
Nickel	mg/l	1/Month	2,4-Dinitrotoluene	mg/l	1/Quarter
Silver	mg/l	1/Month	2,6-Dinitrotoluene	mg/l	1/Quarter
Zinc	mg/l	1/Month	3,3'-Dichloro-benzidine	mg/l	1/Quarter
Antimony	mg/l	1/Month	4-Bromophenyl phenyl ether	mg/l	1/Quarter
Aluminum	mg/l	1/Month	Naphthalene	mg/l	1/Quarter
Mercury	mg/l	1/Month	Bis(2-ethylhexyl) phthalate	mg/l	1/Quarter
Acenaphthylene	mg/l	1/Quarter	Hexachlorobenzene	mg/l	1/Quarter
Acenaphthene	mg/l	1/Quarter	Hexachlorobutadiene	mg/l	1/Quarter
Anthracene	mg/l	1/Quarter	3,4 Benzo-fluoranthene	mg/l	1/Quarter
Benzo(k)fluoranthene	mg/l	1/Quarter	Toluene	mg/l	1/Quarter
Benzo(a)pyrene	mg/l	1/Quarter	Ethylbenzene	mg/l	1/Quarter
Bis(2-chloroethyl)ether	mg/l	1/Quarter	Trichloroethylene	mg/l	1/Quarter
Bis(2chloroethoxy)methane	mg/l	1/Quarter	Phenols	mg/l	1/Quarter
Bis(2-chloroisopropyl)ether	mg/l	1/Quarter	PCB-1016	mg/l	1/Quarter
Butyl benzyl phthalate	mg/l	1/Quarter	PCB-1221	mg/l	1/Quarter
Chrysene	mg/l	1/Quarter	PCB-1232	mg/l	1/Quarter
Diethyl phthalate	mg/l	1/Quarter	PCB-1242	mg/l	1/Quarter
Dimethyl phthalate	mg/l	1/Quarter	PCB-1248	mg/l	1/Quarter
1,2-Diphenyl-hydrazine	mg/l	1/Quarter	PCB-1254	mg/l	1/Quarter
Fluoranthene	mg/l	1/Quarter	PCB-1260	mg/l	1/Quarter
Fluorene	mg/l	1/Quarter	2-Nitrophenol	mg/l	1/Quarter
Hexachlorocyclo-pentadiene	mg/l	1/Quarter	2,4-Dichlorophenol	mg/l	1/Quarter
Hexachloroethane	mg/l	1/Quarter	2,4-Dimethylphenol	mg/l	1/Quarter
Indeno(1,2,3-cd)-pyrene	mg/l	1/Quarter	2,4,6-Trichlorophenol	mg/l	1/Quarter
Isophorone	mg/l	1/Quarter	4-Nitrophenol	mg/l	1/Quarter

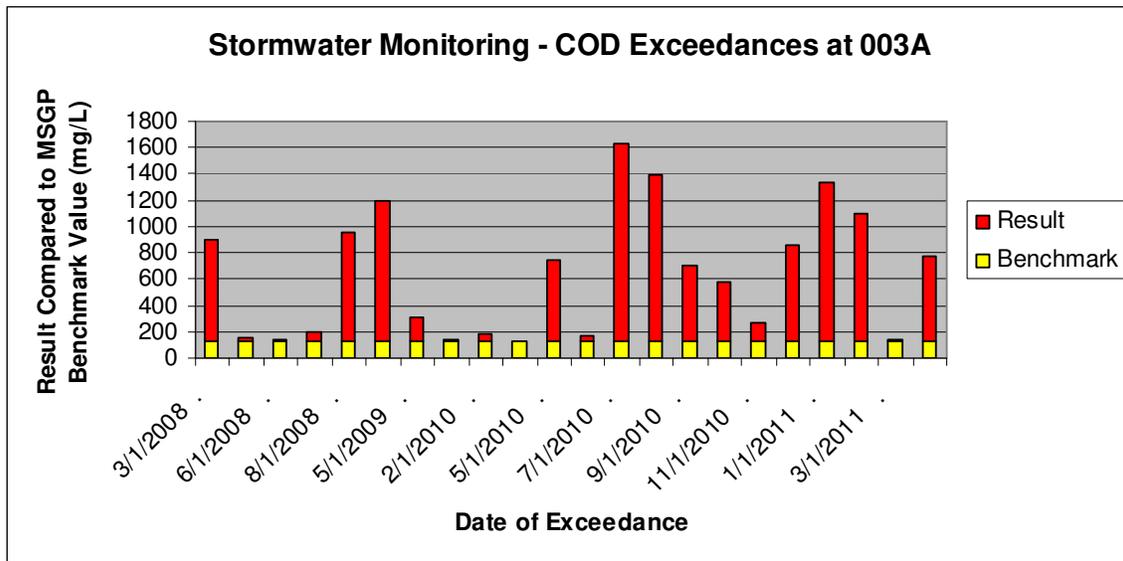
The stormwater monitoring data used in this report occurred between March 1, 2008 and April 1, 2011. To date, a total of 38 stormwater monitoring events have occurred. These 38 events represent the data being used to assess stormwater discharge quality at Bayonne.

Data collected during the 38 monitoring events was compared to the parameter benchmark values listed in the Final 2008 United States Environmental Protection Agency (EPA), National Pollutant Discharge Elimination System (NPDES), Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) and to the NJDEP effluent standard located at N.J.A.C 7:14A-12.8. The charts below represent exceedances of the benchmark values and/or standard.



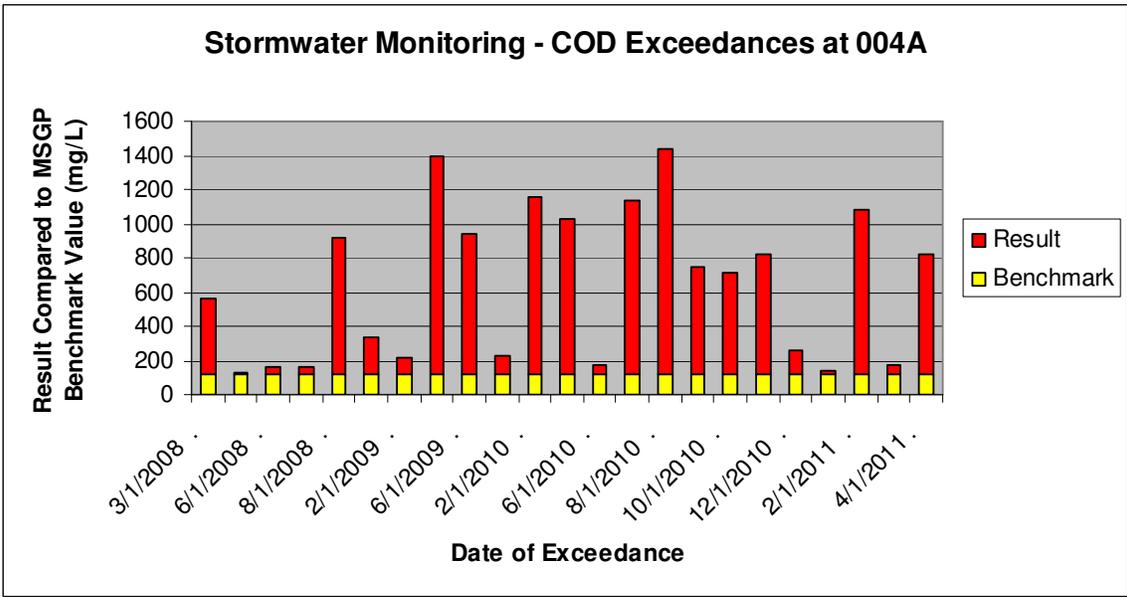
COD Exceedances at 002A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
5/1/2008	188	120	4/1/2010	310	120
6/1/2008	124		5/1/2010	816	
7/1/2008	245		6/1/2010	122	
8/1/2008	935		7/1/2010	1170	
2/1/2009	216		11/1/2010	1320	
3/1/2009	1330		12/1/2010	1430	
4/1/2009	311		1/1/2011	1350	
6/1/2009	337		2/1/2011	1040	
8/1/2009	589		3/1/2011	198	
1/1/2010	132		4/1/2011	769	
2/1/2010	992				

- 24/38 stormwater samples exceeded the MSGP Benchmark Value for COD at 002A.
- The 24 stormwater samples depicted above were between **1.02** and **12.2** times the MSGP Benchmark for COD.



COD Exceedances at 003A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
3/1/2008	900	120	6/1/2010	172	120
5/1/2008	148		7/1/2010	1630	
6/1/2008	144		8/1/2010	1390	
7/1/2008	200		9/1/2010	706	
8/1/2008	957		10/1/2010	570	
3/1/2009	1200		11/1/2010	265	
5/1/2009	316		12/1/2010	862	
9/1/2009	136		1/1/2011	1330	
2/1/2010	179		2/1/2011	1100	
4/1/2010	131		3/1/2011	143	
5/1/2010	743		4/1/2011	771	

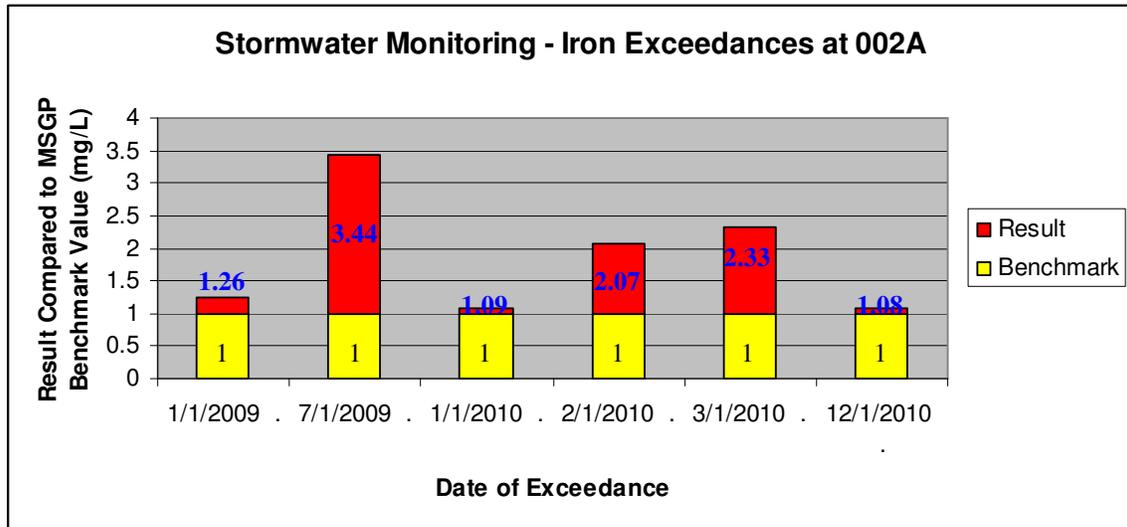
- 22/38 stormwater samples exceeded the MSGP Benchmark Value for COD at 003A.
- The 22 stormwater samples depicted above were between **1.09** and **13.6** times the MSGP Benchmark for COD.



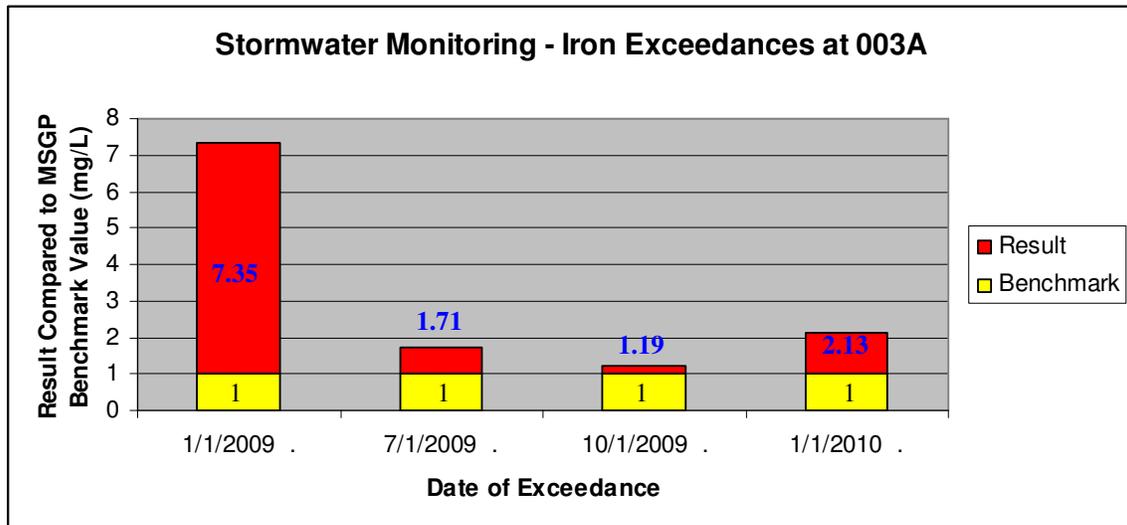
COD Exceedances at 004A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
3/1/2008	560	120	6/1/2010	168	120
4/1/2008	125		7/1/2010	1140	
6/1/2008	160		8/1/2010	1440	
7/1/2008	160		9/1/2010	742	
8/1/2008	916		10/1/2010	718	
9/1/2008	330		11/1/2010	823	
2/1/2009	214		12/1/2010	256	
3/1/2009	1400		1/1/2011	144	
6/1/2009	940		2/1/2011	1080	
11/1/2009	230		3/1/2011	169	
2/1/2010	1160		4/1/2011	824	
5/1/2010	1030				

- 23/38 stormwater samples exceeded the MSGP Benchmark Value for COD at 004A.
- The 23 stormwater samples depicted above were between **1.04** and **12** times the MSGP Benchmark for COD.

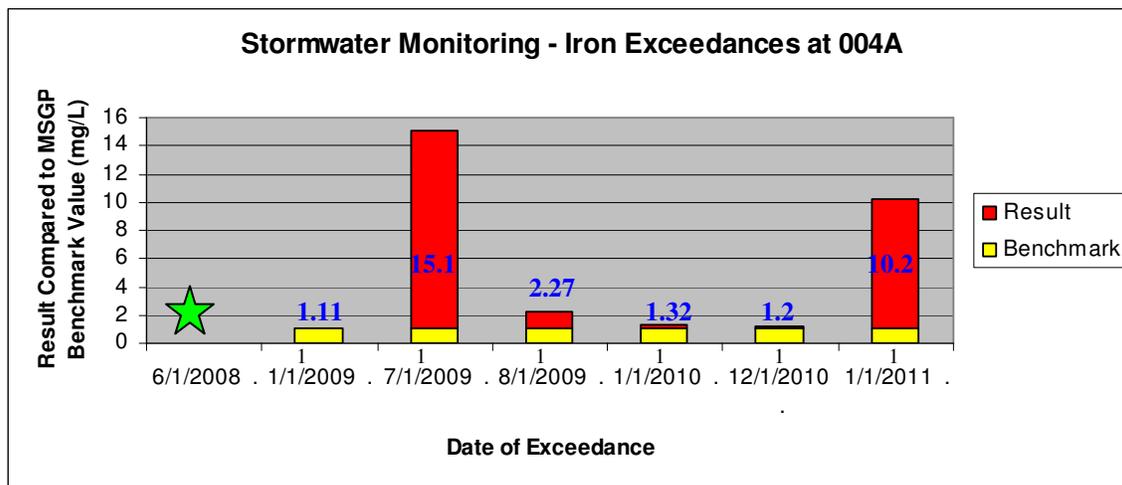
IRON



- 6/38 stormwater samples exceeded the MSGP Benchmark Value for Iron at 002A.
- The 6 stormwater samples depicted above were between **1.08** and **3.44** times the MSGP Benchmark for Iron.

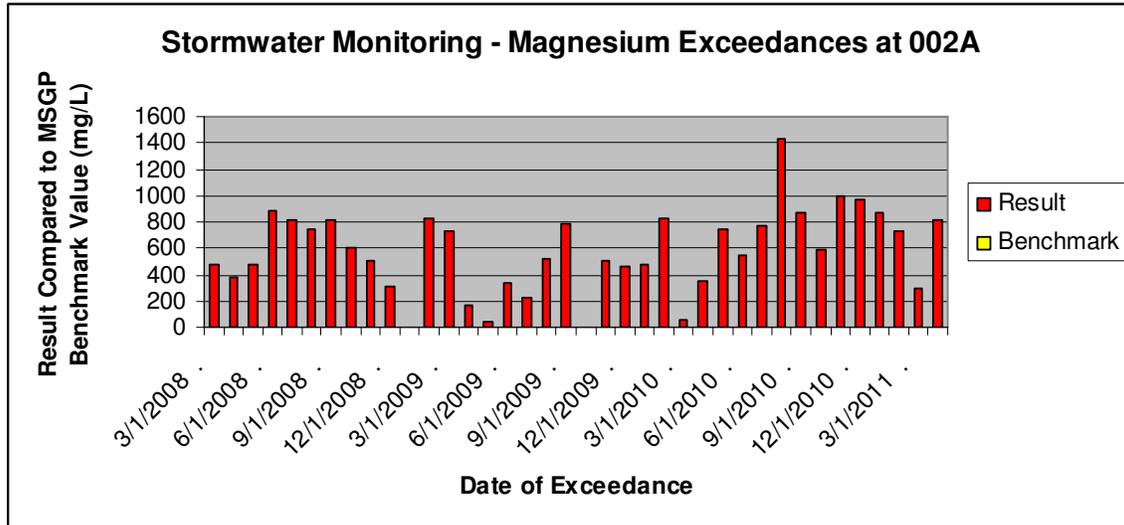


- 4/38 stormwater samples exceeded the MSGP Benchmark Value for Iron at 003A.
- The 4 stormwater samples depicted above were between **1.19** and **7.35** times the MSGP Benchmark for Iron.



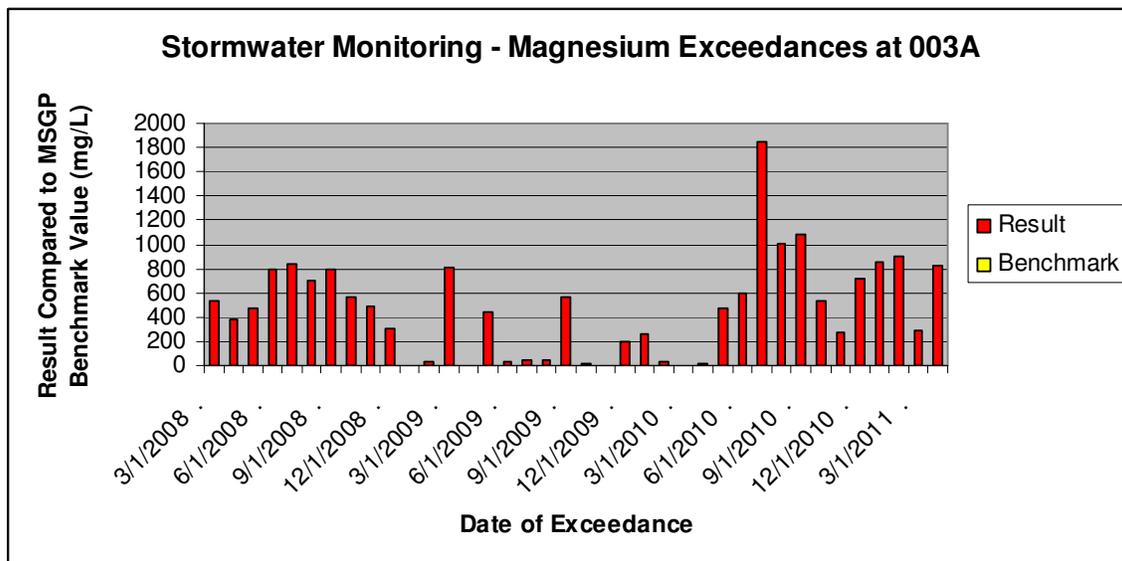
- 7/38 stormwater samples exceeded the MSGP Benchmark Value for Iron at 004A.
- The 7 stormwater samples depicted above were between **1.11** and **691** times the MSGP Benchmark for Iron.
- ★ **On 6/1/2008 the stormwater sample at 004A resulted in an Iron level of 691 mg/L. This was not depicted on the graph so that the other results could be observed.**

MAGNESIUM



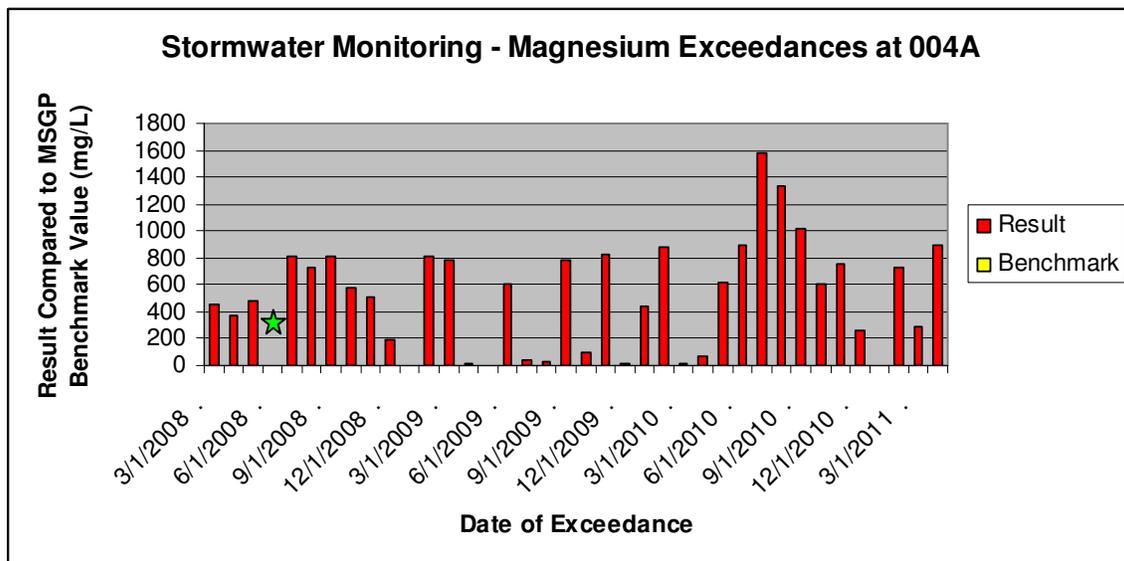
Magnesium Exceedances at 002A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
3/1/2008	476	0.064	10/1/2009	5.19	0.064
4/1/2008	378	0.064	11/1/2009	505	0.064
5/1/2008	477	0.064	12/1/2009	458	0.064
6/1/2008	889	0.064	1/1/2010	476	0.064
7/1/2008	808	0.064	2/1/2010	829	0.064
8/1/2008	738	0.064	3/1/2010	51	0.064
9/1/2008	809	0.064	4/1/2010	345	0.064
10/1/2008	606	0.064	5/1/2010	750	0.064
11/1/2008	502	0.064	6/1/2010	546	0.064
12/1/2008	311	0.064	7/1/2010	778	0.064
1/1/2009	3.53	0.064	8/1/2010	1430	0.064
2/1/2009	833	0.064	9/1/2010	870	0.064
3/1/2009	725	0.064	10/1/2010	590	0.064
4/1/2009	167	0.064	11/1/2010	1000	0.064
5/1/2009	43.1	0.064	12/1/2010	970	0.064
6/1/2009	340	0.064	1/1/2011	865	0.064
7/1/2009	231	0.064	2/1/2011	732	0.064
8/1/2009	515	0.064	3/1/2011	291	0.064
9/1/2009	779	0.064	4/1/2011	814	0.064

- 38/38 stormwater samples exceeded the MSGP Benchmark Value for Magnesium at 002A.
- The 38 stormwater samples depicted above were between **81** and **22,344** times the MSGP Benchmark for Magnesium.



Magnesium Exceedances at 003A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
3/1/2008	534	0.064	10/1/2009	8.82	0.064
4/1/2008	383	0.064	11/1/2009	5.88	0.064
5/1/2008	468	0.064	12/1/2009	191	0.064
6/1/2008	801	0.064	1/1/2010	266	0.064
7/1/2008	846	0.064	2/1/2010	23.2	0.064
8/1/2008	701	0.064	3/1/2010	3.66	0.064
9/1/2008	798	0.064	4/1/2010	9.78	0.064
10/1/2008	560	0.064	5/1/2010	475	0.064
11/1/2008	496	0.064	6/1/2010	594	0.064
12/1/2008	300	0.064	7/1/2010	1840	0.064
1/1/2009	6.13	0.064	8/1/2010	1010	0.064
2/1/2009	34.7	0.064	9/1/2010	1090	0.064
3/1/2009	808	0.064	10/1/2010	529	0.064
4/1/2009	7.55	0.064	11/1/2010	268	0.064
5/1/2009	443	0.064	12/1/2010	719	0.064
6/1/2009	25.7	0.064	1/1/2011	858	0.064
7/1/2009	44.4	0.064	2/1/2011	904	0.064
8/1/2009	43.1	0.064	3/1/2011	294	0.064
9/1/2009	566	0.064	4/1/2011	823	0.064

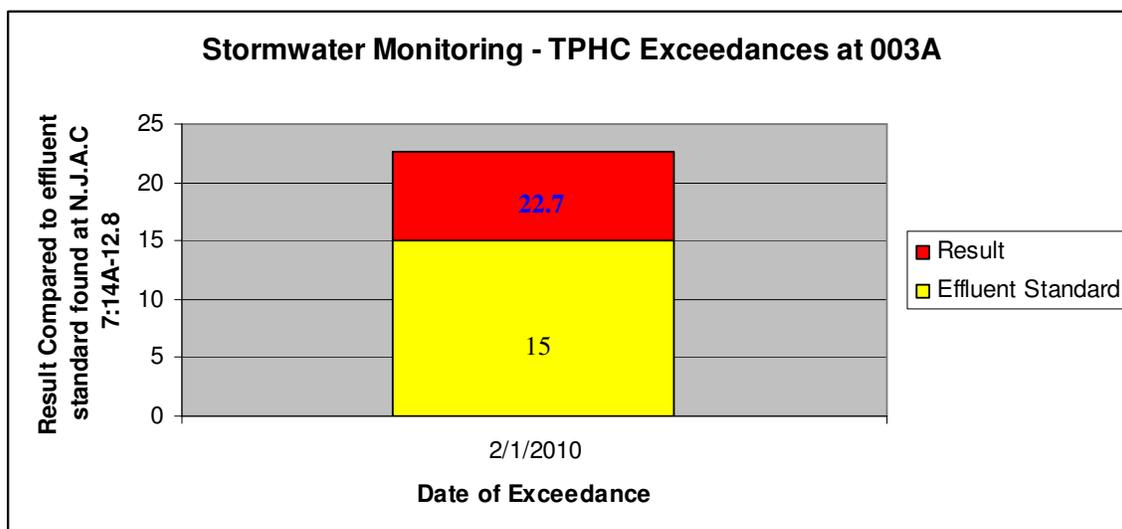
- 38/38 stormwater samples exceeded the MSGP Benchmark Value for Magnesium at 003A.
- The 38 stormwater samples depicted above were between **57** and **28,750** times the MSGP Benchmark for Magnesium.



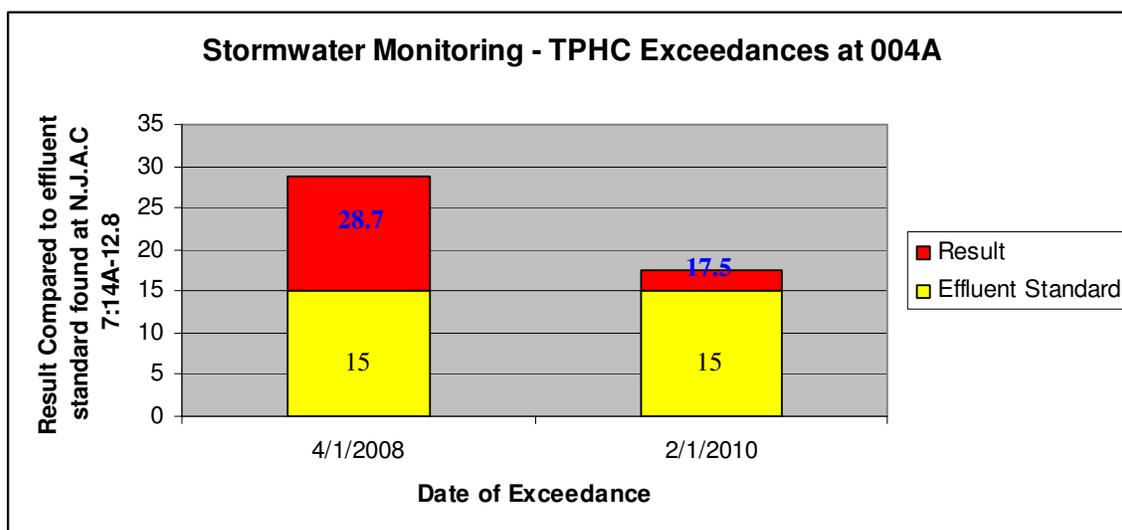
Magnesium Exceedances at 004A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
3/1/2008	458	0.064	10/1/2009	90.6	0.064
4/1/2008	367	0.064	11/1/2009	821	0.064
5/1/2008	484	0.064	12/1/2009	7.6	0.064
6/1/2008	804,000	0.064	1/1/2010	437	0.064
7/1/2008	805	0.064	2/1/2010	876	0.064
8/1/2008	722	0.064	3/1/2010	16.9	0.064
9/1/2008	817	0.064	4/1/2010	68.8	0.064
10/1/2008	583	0.064	5/1/2010	622	0.064
11/1/2008	505	0.064	6/1/2010	890	0.064
12/1/2008	189	0.064	7/1/2010	1580	0.064
1/1/2009	4.35	0.064	8/1/2010	1330	0.064
2/1/2009	804	0.064	9/1/2010	1010	0.064
3/1/2009	782	0.064	10/1/2010	603	0.064
4/1/2009	14.4	0.064	11/1/2010	754	0.064
5/1/2009	4.98	0.064	12/1/2010	263	0.064
6/1/2009	599	0.064	1/1/2011	4.89	0.064
7/1/2009	47.3	0.064	2/1/2011	731	0.064
8/1/2009	23	0.064	3/1/2011	292	0.064
9/1/2009	778	0.064	4/1/2011	893	0.064

- 38/38 stormwater samples exceeded the MSGP Benchmark Value for Magnesium at 004A.
- The 38 stormwater samples depicted above were between **68** and **12,562,500** times the MSGP Benchmark for Magnesium.
- ★ **On 6/1/2008 the stormwater sample at 004A resulted in a Magnesium level of 804,000 mg/L. This was not depicted on the graph so that the other results could be observed.**

TPHC

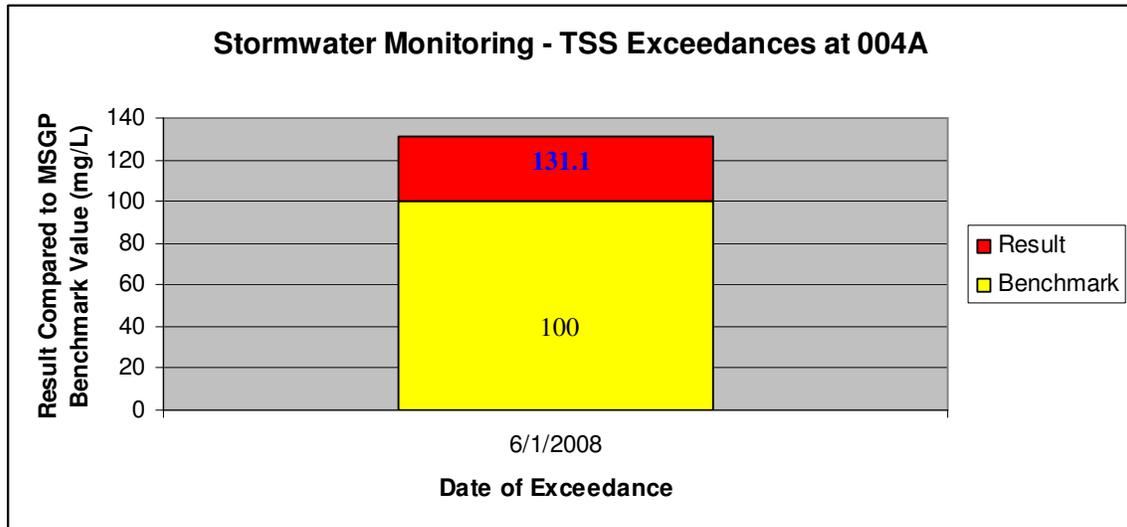


- 1/38 stormwater samples exceeded the effluent standard found at N.J.A.C 7:14A-12.8 for TPHC at 003A.
- The stormwater sample depicted above was **1.5** times the effluent standard for TPHC.



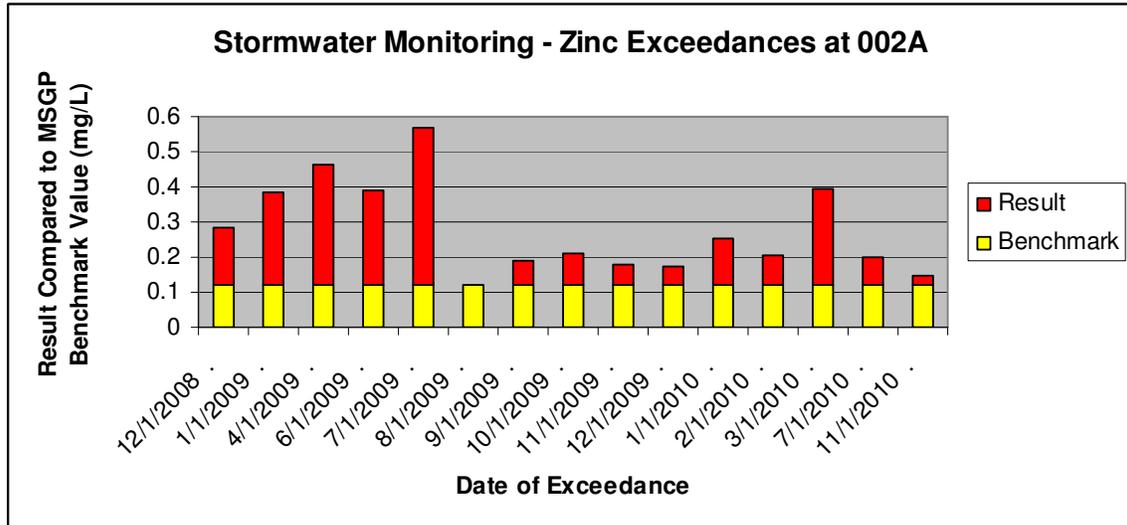
- 2/38 stormwater samples exceeded the effluent standard found at N.J.A.C 7:14A-12.8 for TPHC at 004A.
- The 2 stormwater samples depicted above were between **1.2** and **1.9** times the effluent standard for TPHC.

TOTAL SUSPENDED SOLIDS



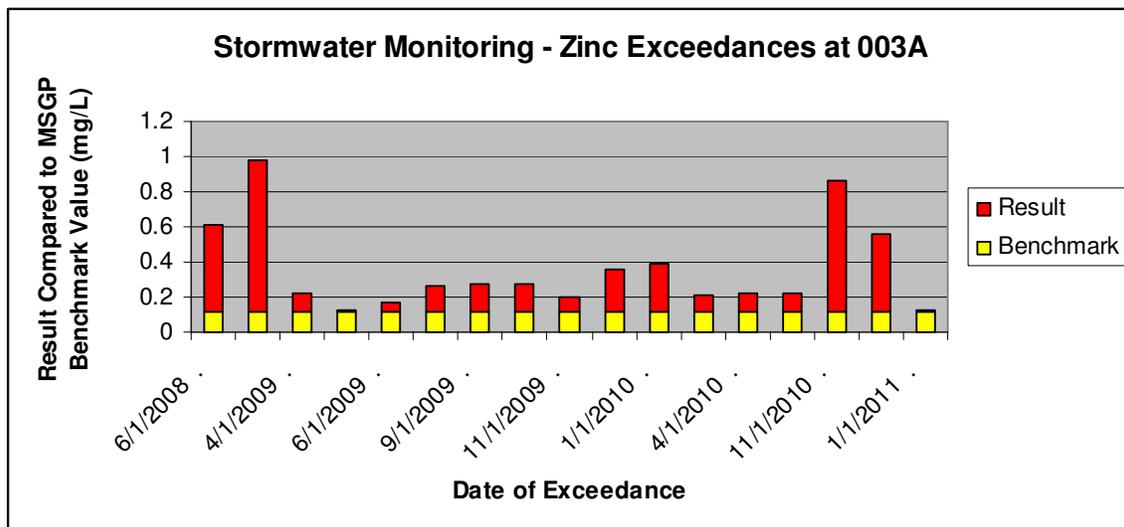
- 1/38 stormwater samples exceeded the MSGP Benchmark Value for TSS at 004A.
- The 1 stormwater sample depicted above was **1.3** times the MSGP Benchmark for TSS.

ZINC



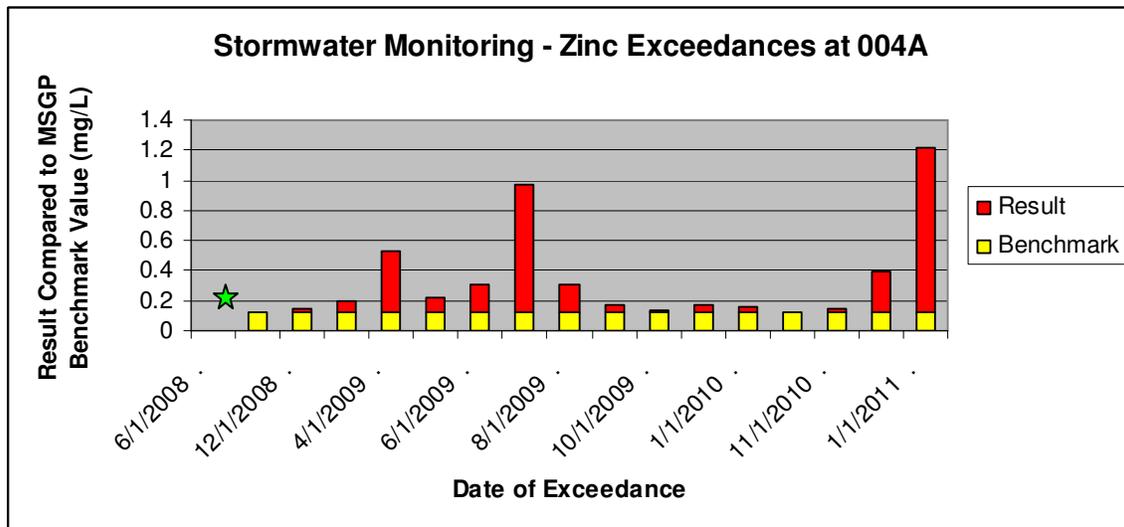
Zinc Exceedances at 002A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
12/1/2008	0.282	0.12	11/1/2009	0.177	0.12
1/1/2009	0.383	0.12	12/1/2009	0.175	0.12
4/1/2009	0.462	0.12	1/1/2010	0.251	0.12
6/1/2009	0.392	0.12	2/1/2010	0.205	0.12
7/1/2009	0.568	0.12	3/1/2010	0.395	0.12
8/1/2009	0.121	0.12	7/1/2010	0.201	0.12
9/1/2009	0.19	0.12	11/1/2010	0.149	0.12
10/1/2009	0.212	0.12			

- 15/38 stormwater samples exceeded the MSGP Benchmark Value for Zinc at 002A.
- The 15 stormwater samples depicted above were between **1.01** and **4.7** times the MSGP Benchmark for Zinc.



Zinc Exceedances at 003A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
6/1/2008	0.607	0.12	12/1/2009	0.363	0.12
1/1/2009	0.984	0.12	1/1/2010	0.394	0.12
4/1/2009	0.226	0.12	3/1/2010	0.214	0.12
5/1/2009	0.125	0.12	4/1/2010	0.217	0.12
6/1/2009	0.166	0.12	6/1/2010	0.217	0.12
8/1/2009	0.265	0.12	11/1/2010	0.868	0.12
9/1/2009	0.274	0.12	12/1/2010	0.56	0.12
10/1/2009	0.269	0.12	1/1/2011	0.125	0.12
11/1/2009	0.197	0.12			

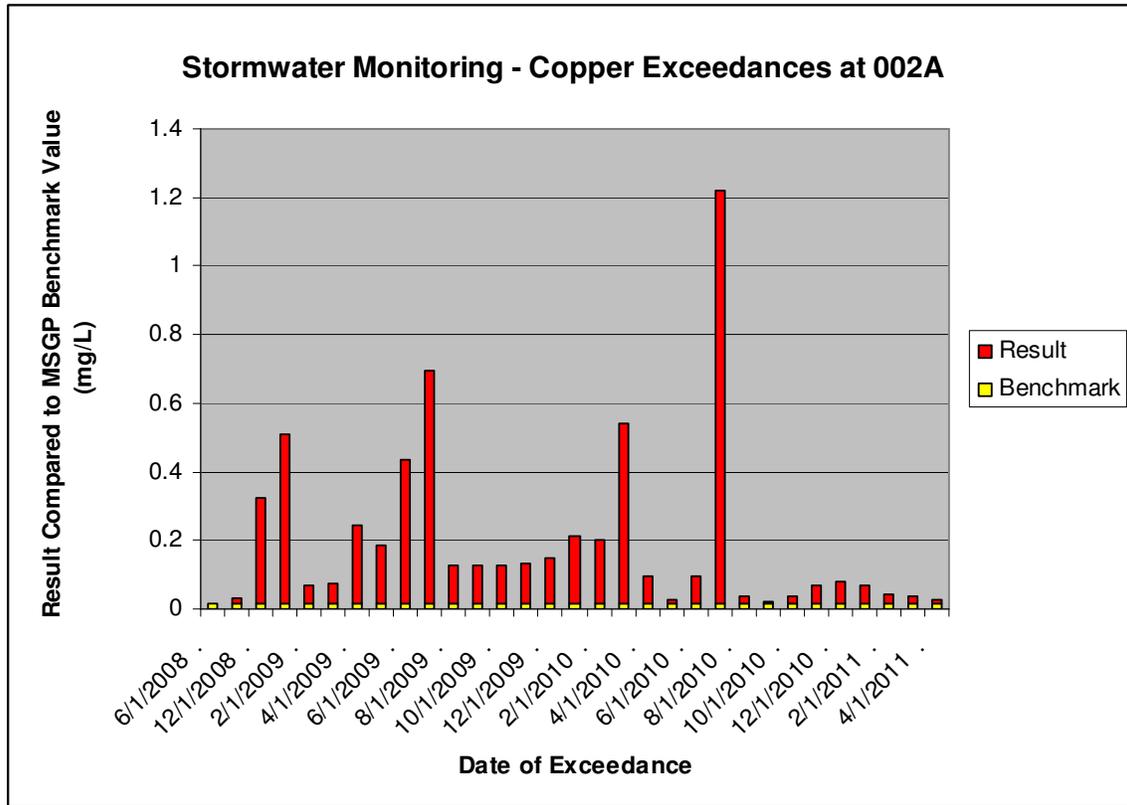
- 17/38 stormwater samples exceeded the MSGP Benchmark Value for Zinc at 003A.
- The 17 stormwater samples depicted above were between **1.04** and **8.2** times the MSGP Benchmark for Zinc.



Zinc Exceedances at 004A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
6/1/2008	143	0.12	9/1/2009	0.167	0.12
9/1/2008	0.123	0.12	10/1/2009	0.131	0.12
12/1/2008	0.15	0.12	12/1/2009	0.177	0.12
1/1/2009	0.2	0.12	1/1/2010	0.164	0.12
4/1/2009	0.524	0.12	3/1/2010	0.125	0.12
5/1/2009	0.221	0.12	11/1/2010	0.147	0.12
6/1/2009	0.309	0.12	12/1/2010	0.395	0.12
7/1/2009	0.972	0.12	1/1/2011	1.21	0.12
8/1/2009	0.312	0.12			

- 17/38 stormwater samples exceeded the MSGP Benchmark Value for Zinc at 004A.
- The 17 stormwater samples depicted above were between **1.01** and **1,192** times the MSGP Benchmark for Zinc.
- ★ **On 6/1/2008 the stormwater sample at 004A resulted in a Zinc level of 143 mg/L. This was not depicted on the graph so that the other results could be observed.**

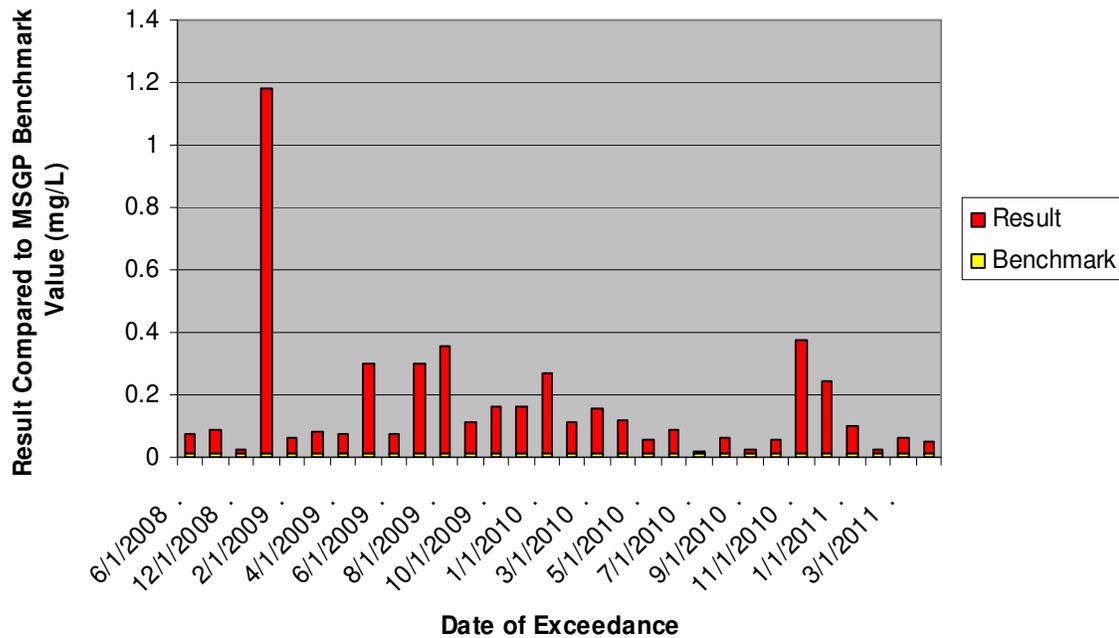
COPPER



Copper Exceedances at 002A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
6/1/2008	0.0164	0.014	2/1/2010	0.203	0.014
9/1/2008	0.03	0.014	3/1/2010	0.539	0.014
12/1/2008	0.321	0.014	4/1/2010	0.098	0.014
1/1/2009	0.509	0.014	5/1/2010	0.0286	0.014
2/1/2009	0.07	0.014	6/1/2010	0.0955	0.014
3/1/2009	0.073	0.014	7/1/2010	1.22	0.014
4/1/2009	0.244	0.014	8/1/2010	0.0365	0.014
5/1/2009	0.183	0.014	9/1/2010	0.023	0.014
6/1/2009	0.434	0.014	10/1/2010	0.0366	0.014
7/1/2009	0.695	0.014	11/1/2010	0.0679	0.014
8/1/2009	0.128	0.014	12/1/2010	0.0816	0.014
9/1/2009	0.125	0.014	1/1/2011	0.0684	0.014
10/1/2009	0.126	0.014	2/1/2011	0.0434	0.014
11/1/2009	0.13	0.014	3/1/2011	0.0349	0.014
12/1/2009	0.151	0.014	4/1/2011	0.0239	0.014
1/1/2010	0.212	0.014			

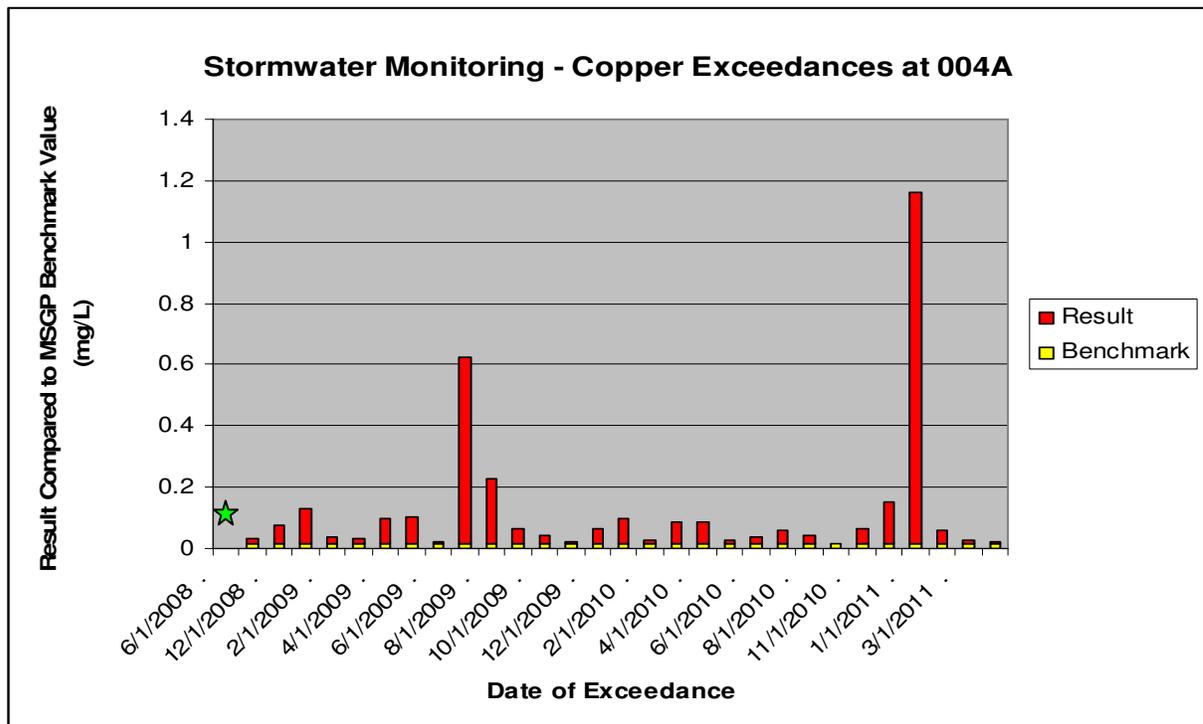
- 31/38 stormwater samples exceeded the MSGP Benchmark Value for Copper at 002A.
- The 31 stormwater samples depicted above were between **1.17** and **87** times the MSGP Benchmark for Copper.

Stormwater Monitoring - Copper Exceedances at 003A



Copper Exceedances at 003A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
6/1/2008	0.0738	0.014	2/1/2010	0.114	0.014
8/1/2008	0.086	0.014	3/1/2010	0.159	0.014
12/1/2008	0.022	0.014	4/1/2010	0.117	0.014
1/1/2009	1.18	0.014	5/1/2010	0.0562	0.014
2/1/2009	0.063	0.014	6/1/2010	0.0862	0.014
3/1/2009	0.08	0.014	7/1/2010	0.0164	0.014
4/1/2009	0.077	0.014	8/1/2010	0.0595	0.014
5/1/2009	0.302	0.014	9/1/2010	0.0229	0.014
6/1/2009	0.0756	0.014	10/1/2010	0.0541	0.014
7/1/2009	0.3	0.014	11/1/2010	0.373	0.014
8/1/2009	0.358	0.014	12/1/2010	0.243	0.014
9/1/2009	0.115	0.014	1/1/2011	0.0969	0.014
10/1/2009	0.162	0.014	2/1/2011	0.025	0.014
12/1/2009	0.16	0.014	3/1/2011	0.0645	0.014
1/1/2010	0.271	0.014	4/1/2011	0.0527	0.014

- 30/38 stormwater samples exceeded the MSGP Benchmark Value for Copper at 003A.
- The 30 stormwater samples depicted above were between **1.57** and **84.3** times the MSGP Benchmark for Copper.



Copper Exceedances at 004A					
Monitoring Date	Monitoring Result	MSGP Benchmark	Monitoring Date	Monitoring Result	MSGP Benchmark
6/1/2008	71.3	0.014	1/1/2010	0.099	0.014
9/1/2008	0.03	0.014	2/1/2010	0.0255	0.014
12/1/2008	0.075	0.014	3/1/2010	0.0858	0.014
1/1/2009	0.13	0.014	4/1/2010	0.0851	0.014
2/1/2009	0.039	0.014	5/1/2010	0.0284	0.014
3/1/2009	0.031	0.014	6/1/2010	0.0362	0.014
4/1/2009	0.098	0.014	7/1/2010	0.0573	0.014
5/1/2009	0.102	0.014	8/1/2010	0.0421	0.014
6/1/2009	0.0196	0.014	9/1/2010	0.0164	0.014
7/1/2009	0.623	0.014	11/1/2010	0.0664	0.014
8/1/2009	0.23	0.014	12/1/2010	0.15	0.014
9/1/2009	0.0657	0.014	1/1/2011	1.16	0.014
10/1/2009	0.0409	0.014	2/1/2011	0.0595	0.014
11/1/2009	0.0234	0.014	3/1/2011	0.0262	0.014
12/1/2009	0.0667	0.014	4/1/2011	0.0218	0.014

- 30/38 stormwater samples exceeded the MSGP Benchmark Value for Copper at 004A.
- The 30 stormwater samples depicted above were between **1.17** and **5,093** times the MSGP Benchmark for Copper.
- ★ **On 6/1/2008 the stormwater sample at 004A resulted in a Copper level of 71.3 mg/L. This was not depicted on the graph so that the other results could be observed.**

SEDIMENT MONITORING CONCLUSIONS

The sediment data shows that several pollutants of concern exist at Bayonne. Arsenic, Lead and PCBs are all in exceedance of the NRDCSCC. The concern over the PCB contamination is further strengthened by the presence of the parameter in the New Jersey's Draft 2010 Draft 303(d) List of Water Quality Limited Waters for the Upper NY Bay/Kill Van Kull (74d07m30s) Sub Watershed. The levels of exceedance are alarming with PCBs between 42 and 1,700 times to NRDCSCC. Remediation of Bayonne for sediment contamination and subsequent water quality impairment is recommended.

STORMWATER MONITORING CONCLUSIONS

The stormwater data shows that several pollutants of concern exist at Bayonne. COD, Iron, Magnesium, TSS, Zinc and Copper are all in exceedance of the EPA NPDES MSGP benchmark values. TPHC was in exceedance of the NJDEP effluent standard located at N.J.A.C 7:14A-12.8.

The levels of exceedance in Magnesium are alarming with results no less than 58 times the benchmark value. On 6/1/2008 the Magnesium result reached over 12 million times the benchmark value. Iron levels were also of concern. On 6/1/2008, Iron levels reached 691 times the benchmark value. Both Iron and Magnesium were not monitored in sediment, but due to the high levels in stormwater, it is recommended that both parameters be monitored in sediment.

COMPARISON OF SEDIMENT AND STORMWATER

PCBs, Arsenic and Lead were not seen at levels of concern in stormwater, but were seen at levels of concern in sediment. Iron and Magnesium were seen at levels of concern in stormwater and are recommended to be added as sediment monitoring parameters to see if a correlation exists. Copper and Zinc were seen at levels of concern in stormwater, but were below the NRDCSCC in sediment. Correlation between sediment and stormwater monitoring was expected. However, this correlation was not seen.